

FINAL PERFORMANCE REPORT

**USDA AMS AGREEMENT NUMBER 12-25-B-1453
(2012-FB)**

**PUERTO RICO DEPARTMENT OF AGRICULTURE
STATE PLAN 2012**

**PROJECTS TO ENHANCE THE COMPETITIVENESS OF PUERTO RICO
SPECIALTY CROPS THROUGH A STATE BUY-LOCAL PROMOTION
AND MARKETING PLAN FOR LOCAL PRODUCERS, BEST
PRACTICES CAPACITY-BUILDING FOR PRODUCERS, AND VARIOUS
RECOMMENDED SUB-GRANTEE PROJECTS**

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Puerto Rico Department of Agriculture**

Description of Approved Grant

This is the final report for Specialty Crops Block Grant under Agreement 12-25-B-1453. The grant amount is **\$381,790**. The grant period begun on October 1, 2012 and ended on September 30, 2015. As a part of the present agreement, the Puerto Rico State Plan included a Sub Grantee project component. The four original main projects and the allotted budgets for each are included in the following table:

TABLE 1: BUDGET FOR MAIN PROJECTS, SOURCES OF FUNDS

	Grant Portion	State Match Portion	Sub Grantee portion
Continuity to State Managed Projects	296,067.13	296,067.13	
Sub Grantee Projects	85,329.48	85,329.48	85,329.48
Totals	\$381,396.61	\$381,396.61	\$85,329.48
Total Budget			\$848,122.70

The Sub Grantee Projects (as prior approved in State Plan), as per item 2 of Table 1, are listed in the following table 2:

TABLE 2: BUDGETS FOR SUB GRANTEE PROJECTS APPROVED, SOURCES OF FUNDS

	Grant Portion	State Match Portion	Sub Grantee portion
International Coffee Vendors, Inc.	\$ 17,827	\$ 17,827	\$ 17,827
<i>Metzgemeister*</i>	\$ 20,000	\$ 20,000	\$ 20,000
<i>Municipality of Guayama*</i>	\$ 20,000	\$ 20,000	\$ 20,000
Universidad de Puerto Rico Utuado	\$ 19,063	\$ 19,063	\$ 19,063
De Rústica Farm	\$ 7,259	\$ 7,259	\$ 7,259
<i>The School of Apiculture of Puerto Rico*</i>	\$ 1,180	\$ 1,180	\$ 1,180

These projects were not performed. Funds were relocated to other projects. **Only three projects shown in bold were performed, and are included in this report.*

The following are the reports of each project. Regarding the Sub Grantee Projects, these will be address in detail on a project by project basis.

STATE MANAGED PROJECT

PROJECT TITLE: Buy-Local Sub-Branding Program and for International Sales of Puerto Rico Products

PARTNER ORGANIZATION: FIDA

PROJECT SUMMARY

This project is divided in three sections; Section A, Section B and Section C) each section referring to its title as follow:

A. Promotion and Advertising for Buy Local Sub Branding Program

The most efficient manner of achieving massive recognition was through collective branding and collective promotion that could include multiple brands. This program gave continuity to previous efforts of achieving better recognition of local produce that were made under “*Del País*” as a principal brand. The *100% Cosecha de Puerto Rico* Sub Brand was based on a seal that was added alongside multiple and various brands. This was with the intention of giving the public a clear message that the packaged product that carried the sub brand was of local origin. The buy-local program was launched publicly and various firms adopted the buy local symbols, by including the *100% Cosecha de Puerto Rico* seal on their packaging.

This communication was developed using a Sub-Brand strategy based on a logo that reads: “*100% Cosecha & Crianza de Puerto Rico*” (“100% Harvested and Raised in Puerto Rico”). The logo or a split portion of it (either *Crianza*- for animal products or *Cosecha*- for crop products) was added on packaging artwork as an endorsement seal, in addition to the producers’ formal individual brand labels and was designed to function as a local production identifier.

B. Local and International Promotional Activities: Promotion for Buy Local Sub branding Program and for Local and International Sales of Puerto Rico Products

With this project FIDA provided a framework to manage collective, shared promotional activities and programs that assist in the marketing component execution for specialty crop producers in general. The main objective is to enable the improvement of local products competitiveness by improving the capacity of consumers to recognize the local agricultural specialty crops producers at the points of sales. The project gave continuity to previous efforts utilizing SCBGP funds, of achieving better recognition of local produce that were made under *Del país* as a main brand. While *Del país* brand continued to be used by firms that previously had been licensed to package all or part of their production, the priority was assigned to the *100% Cosecha de PR* sub brand, based on a seal that was added alongside multiple and various brands with the intention of giving the public a clear message that the packaged product that carried the sub brand was of local origin.

C. Farmers’ Market Promotion

Under this project is included the extension of the project (grant funds approved through 2nd Request Amendment) to *Placita en Plaza del Caribe Ponce*. Since Puerto Rico does not qualify for AMS Farmer's Market Promotion Program, the State Agency felt the need to carry out the type of activities enabled under such grant program. We involved in the promotion of several farmers market initiatives aimed at increasing direct sales from farmers to consumers and promoting greater consumption of locally produced agricultural products. This provided a greater margin for producers, provided a healthy interaction between producers and consumers, making more obvious the need to maintain quality, so that the consumers stay satisfied, and provides access for small firms that were incapable of satisfying retailer requirements or who do not have sufficient volume to participate in regular market channels.

PROJECT PURPOSE

- A. The project proposed was based on providing local consumers with the means to identify and differentiate local specialty crops from those imported. The *100% Cosecha y Crianza de PR* sub brand was based on a seal that have been added alongside multiple brands, to give the public a direct and clear message that the packaged product identify with *100% Cosecha y Crianza de PR* brand was from local origin. In the case of the specialty crops, the seal used was only identified under the name *100% Cosecha de PR*. The advertising campaign promoted the purchase behavior as well as advertising the local origin seal. All advertising should promoted recognition and support for local solely eligible production as differentiated from imported products, that not contributed fully to PR's economy.
- B. The identification of produce as "locally produced" has been the main issue addressed through this project. The identification had to be worked from both ends: from the producer/packager (through recognizable labeling) and from the consumer end (through the capacity to recognize the communications to identify the branding). Among the general consumer public a latent, measurable support existed toward local production for several reasons: perception of freshness and quality; desire to support local economy; traditional sentiment including nostalgia related to childhood memories (previous generations were more focused in agriculture than towards services and manufacture). Many consumers have indicated that they were willing to pay higher prices for local produce to levels that may vary from one person to another. This allowed local products to enhance their competitiveness simply by improving the capacity of consumers to recognize them at the points of sales.
- C. State Agency pursued the use of grant funds to promote farmers markets that could benefit specialty crop producers, by providing necessary market access and increased marginal income to be obtained through a direct sales situation. The specific use was to create promotional activities that could draw public to the markets and increase public knowledge of calendar, schedule and availability. The specific issue or need addressed through the project was the need that a specific group of farmers had for access to direct sales to the consumers to enhance their competitiveness. The need for access was felt by many producers, who were excluded from traditional retail outlets because of their small size

and lack of capacity to deliver large quantities of merchandise consistently; and became disappointed at the prices that market intermediaries offer for their products when they visited the farms to purchase from the farmers. Consumers, on their part, were anxious to be able to buy fresh excellent quality produce directly from the farmers and made a connection with the production aspect of food supply chain for cultural and humanistic reasons.

PROJECT APPROACH

- A. Identification of produce as “locally produced” was the main issue addressed through this project. This identification had been worked from both ends: from the producer/packager (through recognizable labeling) and from the consumer end (through the capacity to recognize the communication signals). The branding program continued as a limited amount of media promotion to make the public aware of the brand; preparation of packaging material and art work for packing material with the brand; local trade show activity related to introducing and announcing the presence of the brand to merchants; printed materials for distribution at trade shows; promotional items, in-store promotions, etc.
- B. The utilization of funds for advertising the *100% Cosecha de PR* brand helped to achieve exposure of local specialty crop products (with or without the shared brand) in local and international trade shows. It was effective in creating opportunities for seller-buyer contact during the shows and thus providing further opportunities to make product available to the public and thus being able to compete. They got exposure of their products; some of them entered into the local and international markets, which resulted in an increase of their sales. Not less important is that through these events, business contacts that eventually could lead to future sales were made. The manner in which FIDA assured the grant funds will solely enhance the competitiveness of specialty products was that funds were used to cover specialty crop producers’ expenses. Reimbursement of grant match was claimed in the cases only where only the firms were eligible for SCBG. The procedure used for a grant reimbursement claim, to be clear, was that FIDA first paid the totality of expenses and later claimed reimbursement for eligible expenses.

The following Local & International Trade Shows were attended:

- **MIDA 2015 (July 2015):** A local event directed to the food industry. In this event farmers begin negotiations which lead to businesses during the year. The following eight (4) agricultural firms participated in this event, with their respective products:

COMPANY NAME	PRODUCT
<i>Café La Finca</i>	Coffee
<i>El Colmenar</i>	Honey
<i>Finca Don Pupa</i>	Fresh Pineapple
<i>Petit Greens</i>	Micro Greens

- **SCAA (April 2015):** An international event directed to coffee producers and related products, in order to promote and incentivize coffee sales from local PR producers. The following coffee producers and firms participated in this event:

COMPANY NAME	PRODUCT
<i>Café Don Ruiz</i>	Coffee
<i>Hacienda Tres Angeles</i>	Coffee
<i>Café Lucero</i>	Coffee
<i>Offecay</i>	Coffee

- **Coffee and Chocolate Expo 2015 (September 2015):** This event was open to the public in general, especially sales were directed to those coffee and chocolate consumers. The following agricultural firms participated in this event, with coffee and chocolate/cacao products:

PARTICIPANTS	PRODUCT
<i>Café Don Ruiz</i>	Coffee
<i>Café Aromas del Campo</i>	Coffee
<i>Bajari</i>	Chocolate/cacao
<i>Caferama</i>	Coffee
<i>Café Serrano</i>	Coffee
<i>Café Offecay</i>	Coffee
<i>Café Puya</i>	Coffee
<i>Café 1739</i>	Coffee
<i>Hacienda Horizontes</i>	Coffee
<i>Hacienda Monte Alto</i>	Coffee
<i>Hacienda Tres Angeles</i>	Coffee
<i>Café La Campana</i>	Coffee
<i>Jeanmarie Chocolat</i>	Chocolate/cacao
<i>Café 100% Boricua</i>	Coffee
<i>Café Oro</i>	Coffee
<i>Café Gran Batey</i>	Coffee
<i>Café Yaucono</i>	Coffee
<i>Café La Finca</i>	Coffee
<i>Sandra's Farms</i>	Coffee
<i>Gustos Coffee Co.</i>	Coffee
<i>Chocolate FORTEZA</i>	Chocolate/cacao
<i>Café Castañer Supremo</i>	Coffee
<i>Hacienda Pons</i>	Coffee
<i>Café Cibales</i>	Coffee

- **Americas Food & Beverage 2014 (October 2014):** This show provides a great opportunity for US companies to interact with retailers and food service buyers from the US, Latin America and the Caribbean.

COMPANY NAME	PRODUCT
<i>Café Lucero</i>	Coffee
<i>Sofrito Doña Tere</i>	Fresh Produce based traditional condiment

- **Caribbean Trade Mission 2014 (June 2014):** Trade mission to the islands of St. Kitts, St. Maarten, St. Thomas, St. Lucia, and Barbados organized in collaboration with the Puerto Rico Trade Company.

COMPANY NAME	PRODUCT
<i>Atenas Pineapple</i>	Fresh Pineapple
<i>Setas de Puerto Rico</i>	Fresh Mushrooms
<i>Sucesión J. Serrallés Second</i>	Fresh Mango
<i>Apiarios Caraballo</i>	Honey
<i>AF Produce</i>	Fresh Produce

- **ASORE 2014 (October 2014):** A local event from the *Asociación de Restaurantes de PR* (Restaurants Association of PR). Local agricultural firms participated in this event to offer their products to the Restaurant and Food Service Industries.

COMPANY NAME	PRODUCT
<i>Ke'Verde</i>	Grape Tomatoes
<i>Setas de Puerto Rico</i>	Fresh Mushrooms
<i>Petit Greens</i>	Micro Greens
<i>Apiarios Caraballo</i>	Honey

- **AgroFresco 2015 (September 2015):** local event hosted and organized by FIDA and the PRDA to bring together producers and a variety of commercial buyers (restaurants, hotels, food service, institutional buyers, supermarkets and other retailers) to promote local sales and support of locally grown and ag-based manufactured products. With over 60 participating companies, from which half were eligible specialty crops producers. The following list includes some of the participants:

COMPANY NAME	PRODUCT
<i>Ke'Verde</i>	Grape Tomatoes
<i>Setas de Puerto Rico</i>	Fresh Mushrooms
<i>Petit Greens</i>	Micro Greens
<i>Apiarios Caraballo</i>	Honey
<i>Atenas Pineapple</i>	Fresh Pineapple
<i>Finca La Plata</i>	Fresh Produce
<i>Café Cibales</i>	Roasted Coffee
<i>Café La Torre</i>	Roasted Coffee
<i>Café Del Alba</i>	Roasted Coffee
<i>Café La Finca</i>	Roasted Coffee
<i>Café Teto</i>	Roasted Coffee
<i>Cali Nurseries</i>	Ornamental Plants
<i>CAPI, Inc.</i>	Hidroponic Lettuces
<i>Empresas Agrícolas Toledo</i>	Fresh Beans
<i>Finca Don Pupa</i>	Fresh Pineapple, Pineapple based hot sauce & marmalade

<i>Finca El Antillano</i>	Fresh Cassava
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- ***Feria Agricola AGRÓPOLIS 2015 (April- May 2015):*** A local event which offered an educational and agricultural platform, so the general public could experience the importance of our local agriculture and the industry, learn about different related subjects, and purchase products.
- ***Feria Del Campo 2015:*** A local event which offered an educational and agricultural platform, so the general public could experience the importance of our local agriculture and the industry, learn about different related subjects, and purchase products.
- ***Made in PR Fair 2015 (December 2015):*** Annual event organized by the Made in Puerto Rico Products Association which offers the opportunity to promote products to local buyers and and direct sales to the general public participating of the activity.

COMPANY NAME	PRODUCT
<i>Café La Torre</i>	Roasted Coffee
<i>Finca Don Pupa</i>	Fresh Pineapple, Pineapple based hot sauce & marmalade
<i>Finca Wuanluis</i>	Fresh Produce
<i>Jardinato</i>	Ornamental Plants
<i>El Colmenar</i>	Honey

- C. Farmers market located at *Plaza Las Américas*, is the main market of our project. The shopping mall is the biggest one in PR, in addition, is located in San Juan which is the capital main city in PR. The market has been celebrated since various years ago, and every year we tried to considerate new vendors to participate in the market. Most of them are farmers that are referred by the Regional Agricultural Offices from the Department of Agriculture. In addition, farmers who participated in other projects within the Department and that are eligible are also considered. When renegotiating the contract each year with the mall administration, farmers/vendors are actually evaluated. Then they continue to be evaluated in almost a monthly basis, since we need to know which of them are complying with the rules established and in addition, are been successful within the market and increasing their sales. Therefore, the vendor's list was updated constantly. Since we have staff permanently in the market, the communication with the vendors and the attention given to them is constant. New vendors are oriented regarding the market's regulations once they are selected to be participating in the market.

PROJECT ACTIVITIES: (Section C – Farmers Market)

- **(Section C) Placita en Plaza Las Américas (November 2014 to December 2015):**
A local farmers market located at the major shopping mall in PR “Plaza Las Américas”: For the past five consecutive years, this farmers’ market has been developed and many farmers and/or agricultural firms have participated. It took place every weekend from Thursday to Sunday. Since it is located in the biggest shopping mall in the metropolitan area, farmers and their products had a lot of exposure. This event has benefitted them in developing their businesses, increasing their sales and achieving new markets. Firms that participated in this farmer’s market during the last grant year reported estimated collective sales of \$1,265,000.00 approximately, showing a slight increase in sales compared to previous years which shows sustained growth. **Some** of the specialty crops farmers and/or agricultural firms that participated in this farmer’s market during the last grant year were:

COMPANY NAME	PRODUCT
<i>De Hojas</i>	Artisanal Herbal & Plant based soaps, lotions, & scrubs
<i>Hacienda Isabel</i>	Café
<i>Café Don Luis</i>	Café
<i>Café Del Alba</i>	Coffee
<i>Café La Torre</i>	Coffee
<i>Café Cialitos</i>	Coffee
<i>Café Tres Picachos</i>	Coffee
<i>Café Cibales</i>	Coffee
<i>Kiero Coco</i>	Fresh Coconut & Coconut Water
<i>Estancia Rosannie</i>	Fresh oranges and orange juice
<i>Mr. Piña</i>	Fresh Pineapple & Pineapple based beverage
<i>Finca Don Pupa</i>	Fresh Pineapple, Pineapple based hot sauce & marmalade
<i>Hacienda Román</i>	Fresh Produce
<i>Agroequino Rodríguez</i>	Fresh Produce
<i>AF Produce</i>	Fresh Produce
<i>Dulces Caseros</i>	Fresh Produce based Artisanal Sweets, Candies, & Desserts
<i>Genabi</i>	Fresh Produce based pastas & sauces
<i>Shelly's Dairy Goat Farm</i>	Fruit Artisanal Sweets and Candies
<i>La Frutera del País</i>	Fruit Traditional Snow Cones & Fresh Cut Fruit
<i>El Colmenar</i>	Honey
<i>Apiarios de Borinquen</i>	Honey
<i>Hidronagel</i>	Hydroponic Lettuces and fresh produce
<i>Lavender Innovations</i>	Lavender Plants & Lavender based products
<i>Jardinato</i>	Ornamental Plants
<i>Santa Bárbara</i>	Ornamental Plants
<i>Kivarek</i>	Ornamentales
<i>D'Manolo</i>	Pumpkin Muffins and Bread
<i>Doria Tere</i>	Sofrito Traditional Condiment
<i>Lolas Cookies</i>	Coconut, Banana, Ginger

Participants went through a process of scrutiny in order to make sure that all funds regarding SCBGP were used exclusively to promote products qualifying as “Specialty Crops”.

Placita @ Plaza Del Caribe Mall in Ponce (October 2014- December 2015): Farmers market located at *Plaza del Caribe* shopping mall, is actually the second biggest mall in PR, and also located in the second main city in PR (Ponce). The selection of farmers/vendors was similar to the *Plaza Las Américas* vendors. Processes established and regarding evaluation, selection and negotiation of contract were also similar, in addition that we also had staff there constantly to

assist and orient them. Estimated annual sales amount to \$250,000.00 approximately. There were 10 eligible participants:

COMPANY NAME	PRODUCT
<i>Café Teto</i>	Coffee
<i>Café La Vieja</i>	Coffee
<i>Dulces Típicos</i>	Artisanal Sweets and Candies
<i>Besitos de Coco y Galletitas</i>	Artisanal Coconut cookies
<i>Finca Don Pupa</i>	Fresh Pineapple, Pineapple based hot sauce & marmalade
<i>Finca Micheal Lopez</i>	Fresh Produce
<i>Apiarios Caraballo</i>	Honey
<i>Plantas Raquel Murphy</i>	Ornamental Plants
<i>Plantas Crimilda Vargas</i>	Ornamental Plants
<i>Chinas Jose Lopez</i>	Fresh Oranges and Orange Juice

The way FIDA/DAPR assured that grant funds were used solely to benefit specialty crop producers was that, since in the farmers market various ineligible products participated, the sponsorship (matching funds) allotted by FIDA was adjusted to restrict the amount of grant funds used to 50% of the percentage portion of the farmer's market (either space wise or by number of stands) that were occupied by eligible producers. The farmer's market participation in both malls were covered by the mall's administration's newspaper and directory, displaying the full variety of products and farmers that participated in the initiative. Also, Additional funds from other sources institutionally were used to cover costs related to ineligible products.

GOALS AND OUTCOMES ACHIEVED

- A.** At the end, specialty crop firms used and adhered the brand: The 82 farmers and/or firms & producers that have been adhered to the *100% Cosecha de PR* brand (as of today) were:
1. Wilfredo Figueroa/Atenas Pineapple
 2. Henry Pagán Pérez/Importadora del Sur
 3. Luis Gerena/Productos Mama Delia, Inc.
 4. Juan Pagán Caraballo/Bananera Pagán
 5. José Santiago/Empresas Norhen, Inc.
 6. Jorge Méndez/Productores de Cítricos de la Montaña
 7. Carmen Idelfonso Ortiz
 8. Francisco Scheck/Finca La Tosca, Inc.
 9. José V. Fabre Laboy/Bananera Fabre
 10. Naia N. Seda
 11. Víctor N. Martínez
 12. Agroproductos Esperanza
 13. Luis Almodóvar/Finca Don Pupa
 14. Arthur J. Simeon/Torrefacción Siemon
 15. José M. Colón Santos
 16. Luis E. Carrasquillo López/Finca Carrasquillo
 17. Finca el Sol de Joaquín, Inc./Jean P. Giuliani
 18. Productos Nativos Corp/José C. Collazo.
 19. Emanuel Flores Miranda/Finca y Bananera Maneque
 20. Lucemy Velázquez Pagán/Lucemy Agrícola Corp.
 21. Sorimar Rodríguez/Agroequino Rodríguez, Inc.

22. Héctor Mercado Crespo/Café Teto
23. Altemio Valentín Figueroa/Beneficiado Valentín
24. Alberto Méndez Custodio
25. Samuel Colón/Banaera Morales, Inc.
26. Rebecca Brass/Setas de PR
27. Amílcar Rodríguez Medina/Parm Farm
28. Víctor M. Martínez
29. Miguel Santiago Collado
30. Ferdinand Rivera/Hacienda Ana Luisa, Inc.
31. Miguel López Hernández/Café Jayuya
32. Jesús M. Quinonez/Hidroverdes Corp.
33. José B. Morales Jiménez/Café Gran Batey
34. Luis E. Alcover Colón/Café Lareño
35. Modesto Velázquez/Finca El Amanecer
36. Wilfredo Ruiz Feliciano/Finca Vista Hermosa
37. Ana E. Troche/Hortaliza Hidropónicas del Oeste
38. José M. Toro/El Soberano
39. José A. Ortiz Zayas/Sucesión J. Serrallés Second, Inc.
40. Brenda W. López Lamboy
41. Daniel Alvarado Collazo
42. Roberto Vazquez Raíces
43. Zabulon Mercado Santiago/Finca Mirador del Valle
44. Juan de Dios de Jesús
45. Angel M. Negrón Rivera/HAR Products
46. James More Rosario/Hidropónicos del País
47. María E. de Jesús/Hidrocultivos Carolinenses, Inc.
48. Jorge Casas Cordero/Agropónicos Cosecha de PR
49. Félix M. González/C&F Products, Inc.
50. Finca Bermúdez López, Inc.
51. Eduardo Arroyo/Cooperativa de Servicios Agrícolas Illescana
52. Allen Zack/Finca Agrícola Thalassa, Inc.
53. Iván Arocho Arocho
54. Gilberto González Pérez
55. Francisco Alicea Aponte
56. Virgie Pomales Cruz
57. Angel Alicea Aponte/Alicea Frutas y Vegetales
58. Raúl de Jesús Alvarado
59. Rosa E. Rodríguez/Finca Rodriguez
60. Eduardo Muñoz Oquendo/Productos de mi Tierra
61. Francisco Román Medina/Finca Rona Son Farmer
62. Francisco Román Soto
63. José Acosta Ríos/MJ Farm
64. Roberto Torres del Valle
65. Carlos Matos Díaz
66. Alenis Flores Torres/AF Produce
67. Pedro Negrón Machuca
68. Héctor L. Torres Torres/Finca el Buen Cosecho
69. José I. Rodríguez Colón/La Romanita
70. Miguel Latorre
71. Henry Martínez Olivara
72. Heriberto Rivera Vargas
73. Héctor A. Santiago Rodríguez/Cali Nurseries
74. Carlos E. Planel/Bananera Planel

75. Joaquín Puigdorfilá Esteves/Bloom Produce, Inc.
76. Sonia Carlo Acosta/Productos Sana, Inc.
77. Hugo Díaz Molini/Hacienda Cafetalera Río Prieto, SA
78. Iván D. González Ramos/González González Products, Inc.
79. Antonio Fahdel Castelví/Borinquen Green
80. Joaquín Pagán Falderas/Hydrofarm Pagán, Inc.
81. Rolando Caudales Rivera/Líneas Verdes Hidro, Inc.
82. Zenaida Agosto Quintana/Hidro Nagel Corp.

B. Through the participation in all local and international events, in which our local agricultural firms participated, goals and outcomes were achieved. Here are some examples of successful participation of some producers when attending the following events:

- **SCAA 2015:** all participating companies presented their specialty grade coffees to prospect buyers from around the world. Green coffee samples were displayed and roasted coffee was brewed and served to be sampled by those buyers that presented interest in order to evaluate the different coffees and discuss purchase possibilities. Those buyers with further interest requested green coffee samples to be sent respectively for further evaluation. These samples were sent after the participation as a preview of this year's harvest in order to initiate purchase negotiation. Potential buyers showed interest in both green and roasted coffee. This participation also served as an opportunity to further promote the quality of Puerto Rican specialty coffee as well as to educate participating coffee growers and PRDA staff about different technical subjects about specialty coffee standards, growing and harvest best practices, cupping and roasting. As informed, they had a potential increase in green coffee export sales of about 600 quintals to potential buyers from the US and several European countries like UK and Italy. The awareness created in projected sales for the next year was in about 800 quintals, representing new market and business opportunities and international relations despite the pest and weather struggles the crop has suffered during the past crop year.
- **Outbound Trade Mission to the Caribbean:** This outbound trade mission was coordinated with the *Compañía de Comercio y Exportación de Puerto Rico* (Puerto Rico Trade Company). Five (5) local agricultural firms participated with the purpose of achieve sales, export and identify business opportunities within the Caribbean. All of them agree that the islands with major business sales opportunities were St. Marteen, St. Thomas and St. Croix. Local firms were: (1) *Apiarios Caraballo* (honey) achieved business contacts with the following businesses: Mercants Market (St. Thomas); Le Grand Marché, U & Me Whole Sale and Bimaco Distributors (St. Marteen); Supreme Distributors, Distribution Inc., Frank B. Armstrong LTD and Paul Clarke Holdings (Barbados), and finally Belles Ruches (St. Lucia). (2) *AF Produce* (fresh produce) achieved business contacts with: Merchants Market (St. Thomas); Le Grand Marché, Sunny Foods and Bimaco Distributors (St. Marteen); Supreme Distributors, Masy Distributors, Inc., Grady Marketing, Inc. and Paul Clarke Holdings (Barbados); Winfresh (St. Lucia), and Angie's Garden and Skipa in St. Kitts. (3) *Sucesión Serrallés* (ornamentals and mangoes) achieved business opportunity in St. Thomas with center gardens, landscaping and hotels. In addition, they found a business opportunity for grass sales, palms and ornamental plants. Finally, for the mango

sales they found a great business opportunity for export the fresh fruit. In Barbados they found sales opportunity for plugs plants and terminated plants in Peatmoss. In St. Lucia the sales opportunity was for both plugs plants and terminated plants in Peatmoss. (4) *Atenas Pineapple* (pineapple) achieved business contacts with the following companies: Grady Marketing, Inc. and Paul Clarke Holdings (Barbados); Nevis Tourism Aut. (Nevis); Proper Care and Price Smart (St. Kitts); AC Global, Le Grand Marche, Pearl Studio; Me & U whole Sale; Bimaco Distributors and WE Corporate Solutions (St. Marteen).

- **Americas Food & Beverage 2014:** The main objective of attending this event was to promote the local agriculture and products; to identify opportunities for the local industry, and to achieve sales for roasted coffee and sofrito. Local firms that participated were: *Café Lucero* (green and roasted coffee) and *Sofrito Doña Tere* (fresh produce based traditional condiment). This event, celebrated in Miami FL is one of the most important shows in the Caribbean area, with international buyers participation. The Florida market is one of the most important for Puerto Rican companies in the food and beverage sector, due to the high concentration of hispanic population. The opportunities provided by this international fair helped to establish business relationships with major buyers, and thus promote the penetration of our international trade companies. The participating local firms achieved business opportunities within Florida, the Caribbean and Texas. Follow up is still being given to achieve and monitor resulting sales.

- C. Without any doubt, the success that the *Plaza Las Américas* market at the northern part of PR had in the past years, led to expand the market to the *Plaza del Caribe* mall in the southern part of the island. This definitively provided farmers and producers a great opportunity for the direct sales of their agricultural products. Firms that participated in Plaza Las Américas farmer's market during the last grant year reported estimated collective sales in \$1,265,000.00 while *Plaza del Caribe* reported estimated sales of approximately \$250,000.00. Both reported slight increase in sales amounting for a 10% increase approximately that fulfills expectations regarding our goals and outcomes, but mitigating circumstances always affected the project in some instances, particularly within an environment of a tighter economy. Therefore, we felt satisfied with the outcomes achieved, since the vendors resulted definitively benefited from the project, when increased their sales as per their participation in the project.

BENEFICIARIES

- A. The beneficiaries (farmers/agricultural firms), which were impacted and were benefitted from this project, were listed in prior section Goals and Outcomes Achieved.
- B. Approximately 50 farmers and/or firms or producers were the beneficiaries of local and international tradeshow and activities. The list of the participating firms is described under the Project Activities section.

- C. *Plaza Las Américas* market had 29 participating specialty crop companies while *Plaza del Caribe* market had sixteen (16) participating specialty crop companies. Please refer to the Project Activities section, to see the list of beneficiaries in both markets at *Plaza Las Américas* Mall in San Juan and *Plaza del Caribe* Mall in Ponce, and a description of their agricultural specialty crop products.

LESSONS LEARNED

- A. Local producers became aware of the importance to enhance the product origin and the benefit to use a common identification seal that means product quality and local origin.
- B. The major lesson learned from the implementation of this project is the great exposure that the farmers and/or agricultural firms gained when participating in both local and international events. The participation of the local farmers and/or agricultural firms in all those local and trade shows, facilitated the promotion of their products and the increase of their sales. As an example, participation of specialty coffee firms in the SCAA event demonstrated that there has been a negative perception regarding the local specialty coffee and its quality which has improved through consistent promotion and participation at this event. It also provides an excellent educational platform to continue improving our specialty coffee's competitiveness. Their participation helped to inform the positive side of our quality specialty coffee; promote our coffee products, and establish business relationships within the local and the international industry. They also strengthened business relationships with other local and international farmers and agricultural enterprises, and finally market niches were identified in order for our farmers and agro businesses could obtain business opportunities. Using as example the Caribbean Trade Mission, it was learned that currently the Caribbean works under a treaty that is known as CARICOM. The following islands are under the treaty: Antigua; Barbuda; Bahamas; Barbados; Belize; Dominica; Grenada; Guyana; Haiti; Jamaica; Monserrate; St. Lucia; St. Kitts; Nevis; St. Vincent and Surinam. Under the treaty the islands could negotiate in free commerce. In the majority of the islands the taxes are approximately 40%. This will difficult the entry of our local products, and our local price competitiveness. It was also learned that, in case of the mango sales, there is a need to import processed product to make value added products. Nevertheless, local products have a great entry opportunity in islands like St. Thomas; St. Croix; Tortola and S. Marteen, since the islands does not have taxes or in any case there is a tax, it is very low. The major source of income within all the islands is the tourism; and since the population is low, the floating population exceeds in many cases one million per island. Reason why the food consumption is huge, resulting in great opportunities for our local agriculture. From this event, also pending is a meeting with the Purchases Director from Royal Caribbean cruises. This will be a great opportunity to sold and supply the cruise ships with local products. Knowing how these markets operate within the extent of the mentioned trade agreement helps us identify niches in which companies can be competitive despite the preferential treatment that other competing products might have

within those markets.

For some special achievements that resulted from the participation of these firms in the local and international trade shows, please refer to the Goals and Outcomes Achieved section.

- C. Main lesson learned from establishing this farmer market was that the local farmers and producers gain space for the direct sale of their agricultural products. Most important, this opportunity came free of charge and in addition that they were located in the two major shopping malls of Puerto Rico. One lesson learned is that, in case of the recently opened Plaza del Caribe mall, we need to advertise it more effectively so more farmers request participation. Also, we will need to renegotiate the space provided so we could have more space to expand the farmers market. It is not that it is in a bad location, but the mall space provided is smaller than the one provided at *Plaza Las Américas* in San Juan, limiting us the amount of participants and the persons visiting the market. One of the main advantages of having a "Mall Farmers Market" is that many people that don't have access to fresh produce or live in urban areas may have access to freshly produced vegetables and fruits.

PROBLEMS AND/OR DELAYS

B. (Section B) We encountered inconveniences attending to all local and international events proposed due to several factors. First, we suffered twice a change in FIDA's Executive Director and this change delayed most of our operations. Another problem we confronted was due to the economic crisis the Government of PR has, that has been affecting some of the governmental agencies including the Department of Agriculture. The legislation passed (Law 66) established a fiscal control in most of our governmental agencies. One of the controls was regarding travel, and because of this law some events could not be attended as planned. As a result, we could not achieve full event participation of all proposed events.

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ADDITIONAL INFORMATION:



STATE MANAGED PROJECT (2) (THROUGH 1st AMENDMENT TO GRANT)

PROJECT TITLE: Developing New Varieties of Avocado Trees/Seeds-Production in Puerto Rico to Satisfy Local Demand and Substitute Imports

PARTNER ORGANIZATION: FIDA

PROJECT SUMMARY

The project proposed to purchase trees of new varieties of avocado, in order to increase the production locally and reduce the importation of more than 200,000 quintals of avocado. Our local production does not satisfy the demand for this product in local markets. This will allow us to carry out a pilot experiment aimed at initiating cultivation of new varieties of avocado to be sowed: ***Wilson Popenoe; Candelaria; Pollock; Butler; Picó Godreau; Semil 34; Fushia; Simmonds (Pollock 2)*** and ***Avila***. It was proposed to seed approximately 200 cuerdas (48 trees/cuerda) of these new varieties, utilizing as reference the models from the study of the University of California in the San Joaquín Valley of 2011, for avocado sowings with irrigation by dripping.

From November 2014 to December 2015 5,904 avocado trees were delivered to a total of 123 acres (cuerdas). These sows are being inspected and the vouchers for fertilizers and insecticides are being delivered. Wilson Popenoe, Pollock, Simmons, Avila, Butler, Semil 34, Fuschia, Candelaria, Russel and Pico Godreau where the varieties used in this period. Two training sessions were given in relation to, the best agricultural practices for the production of Avocado trees, were offered on August 14, 2014 (Isabela, PR) and on October 9, 2014 (in Juana Díaz, PR). Approximate total of farmers trained was 72. The only problem we encountered is that the delivery of trees is being done in batches due to the availability of seeds in the Experimental Station of Juana Diaz.

PROJECT APPROACH

The purchase of commercial varieties of avocado trees recommended by the agricultural Experimental Station of Puerto Rico will be encouraged and will be given a voucher for the purchase of fertilizers and/or pesticides recommended for this crop. Each of the 66 (up to 200) farmers will plant 1 (up to 3) acre(s) plot of avocado to be tended in the technically most advisable manner with the hope of promoting a transition to a higher-yield avocado production. Grant funds are proposed to be used at a 33.33% rate (together with 33.33% from local match funds) to purchase and introduce 9,600 trees of the mentioned varieties. In addition, these trees will be provided at a \$2.00 charge (or the other 33.33%) to the farmers who will make a commitment to sow them.

GOALS AND OUTCOMES ACHIEVED

The Puerto Rico Department of Agriculture and its Innovation and Commercialization Auxiliary Secretary (SAICA) worked alongside the Technological Group for the Avocado Production, from the Experimental Agricultural Station of the University of Puerto Rico, Mayaguez campus. SAICA

will be offered technical support and training. In addition, the Agricultural Enterprises Development Administration (ADEA) from the Department of Agriculture was in charge of implementing the avocado sowing program through its Regional Offices. Also, ADEA provided a collection system in order to collect the amount that will be charged to the farmers.

During August to October 3600 avocado trees were delivered to a total of 80 acres (*cuerdas*) and from November 2014 to December 2015 5,904 avocado trees were delivered to a total of 123 acres (*cuerdas*), for a total of 203 acres (*cuerdas*). The name of varieties given to farmers, average weight of the fruit, type of flower and crop are:

- *Wilson Popenoe* (weight 20-30 ounces)(Flower type A)(Crop period June-August)
- *Candelaria* (weight 20-35 ounces)(Flower type A)(Crop period July-October)
- *Pollock* (weight 20-35 ounces)(Flower type B)(Crop period August-September)
- *Avila* (weight 20-35 ounces)(Flower type A)(Crop period August-October)
- *Butler* (weight 20-25 ounces)(Flower type A)(Crop period Sept-Nov)
- *Picó Godreau* (weight 20-30 ounces)(Flower type B)(Crop period Nov-Jan)
- *Semil 34* (weight 20-25 ounces)(Flower type A)(Crop period Nov-Feb)
- *Fuschia* (weight 30-40 ounces)(Flower type A)(Crop period Jan-Mar)
- *Simmonds*<*Pollock 2*> (weight 20-30 ounces)(Flower type B)(Crop period Jun-Aug)

They were planted between 25 x 30 feet; others between 30 x30, depending of the variety to be sowed and the area. Avocado sowings will be through irrigation by dripping. Therefore, the goals of renewing enthusiasm of avocado farmers in the establishment of new acreage of new varieties of avocado as well as the introduction of new varieties of avocado, increasing the yields per acre obtained from avocado production were achieved.

The Agricultural Experimental Station of the University of Puerto Rico, and the Professor José Samora set up workshops where farmers were able to learn good agricultural practices. Two training sessions that were perform, and related to best agricultural practices were offered to farmers, and were performed on:

- August 14, 2014 (Isabela, PR)
- October 9, 2014 (in Juana Díaz, PR).
- Approximate total of farmers trained was 72.

During August to October 3600 avocado trees were delivered to a total of 80 acres (*cuerdas*). These sows are being inspected and have been delivering little bit vouchers for fertilizers and insecticides. Semil, Butler, Wilson Popene, Fuschia, Semil 34, Pollock, Simmoths, and Candelaria: During the first installment of avocado trees varieties are encouraged. It was recommended changing some of the varieties that are currently encouraging, to prevent

overproduction of avocados during the traditional dates. In the month of December starts the delivery of the second stage, 2,160 new avocados for a total of 45 acres (*cuerdas*). They are encouraging varieties: Avila butler, Semil 34, Wilson Popenoe, Pollock, Pico Grodreau Fuschia, Candelaria and Russel.

LESSONS LEARNED

At first farmers were a little skeptical to the idea of establishing large farm productions of avocado trees. However, in the process farmers identified an opportunity of establishing a future market due to importing restrictions related to the "Mediterranean Fruit Fly". We were able to promote this initiative with more ease due to these situations.

BENEFICIARIES

From December 2014 to December 2015 more than a 100 farmers participated in the program. These farmers are from all agricultural regions of Puerto Rico. Figure 1, 2 and 3 shows how the avocado trees were handed out and to what agricultural region they went.

Dec 2014 - Jan 2015

Acres (Cuerdas)	Region	Varietie 1	Amount of trees	Varietie 2	Amount of trees	Total Trees	Farmer (\$2)	ADEA (\$4)	Total
1	Arecibo	Wilson Popenoe	40	Candelaria	8	48	\$96	\$192	\$288
1	Narajito	Butler	40	Semil 34	8	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Narajito	Fuschia	24	Semil 34	24	48	\$96	\$192	\$288
1	Narajito	Candelaria	40	Pollock	8	48	\$96	\$192	\$288
1	Narajito	Butler	32	Picó Godreau	16	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	80	Pollock	16	96	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Fuschia	40	Semil 34	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Fuschia	40	Semil 34	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Fuschia	40	Semil 34	8	48	\$96	\$192	\$288
1	Ponce	Picó Godreau	40	Butler	8	48	\$96	\$192	\$288
1	Ponce	Picó Godreau	40	Butler	8	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Butler	8	48	\$96	\$192	\$288
1	Ponce	Butler	40	Semil 34	8	48	\$96	\$192	\$288
1	Ponce	Avila	24	Pollock	24	48	\$96	\$192	\$288
1	Ponce	Avila	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Avila	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Avila	32	Pollock	16	48	\$96	\$192	\$288
1	Ponce	Candelaria	24	Pollock	24	48	\$96	\$192	\$288
1	Ponce	Candelaria	40	Pollock	8	48	\$96	\$192	\$288
1	Ponce	Candelaria	24	Pollock	24	48	\$96	\$192	\$288
1	Ponce	Russel	40	Avila	8	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Butler	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Candelaria	8	48	\$96	\$192	\$288
1	Utuado	Butler	40	Semil 34	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Semil 34	40	Butler	8	48	\$96	\$192	\$288
44			1,720		440	2,160	\$ 4,224	\$ 8,448	\$ 12,672

Figure 1

March - Jun 2015

Acre (Cuerdas)	Region	Variete 1	Amount of trees	Variete 2	Amount of trees	Total Trees	Farmer (\$2)	ADEA (\$4)	Total
1	Arecibo	candelaria	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Arecibo	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Narajito	Wilson Popenoe	41	Pollock	7	48	\$96	\$192	\$288
1	Narajito	Simmons	30	Pollock	18	48	\$96	\$192	\$288
1	Narajito	Avila	42	Pollock	6	48	\$96	\$192	\$288
1	Narajito	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Ponce	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Ponce	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Utua	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Utua	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Utua	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Utua	Butler	44	Pollock	4	48	\$96	\$192	\$288
1	Utua	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	San German	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	San German	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	San German	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	San German	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	San German	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	San German	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Lares	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Lares	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Lares	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Butler	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Butler	41	Pollock	7	48	\$96	\$192	\$288
1	Mayaguez	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Mayaguez	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Mayaguez	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Mayaguez	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Mayaguez	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Mayaguez	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
39			1,625		247	1,872	\$ 3,744	\$ 7,488	\$ 11,232

Figure 2

Sept - Dec 2015

Acres (Cuerdas)	Region	Varietie 1	Amount of trees	Varietie 2	Amount of trees	Total Trees	Farmer (\$2)	ADEA (\$4)	Total
1	Arecibo	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Arecibo	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Arecibo	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	San German	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	San German	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	San German	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	San German	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	San German	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	San German	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Lares	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Lares	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Lares	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Butler	40	Pollock	8	48	\$96	\$192	\$288
1	Lares	Butler	41	Pollock	7	48	\$96	\$192	\$288
1	Mayaguez	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Mayaguez	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Mayaguez	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Mayaguez	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Mayaguez	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Mayaguez	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Naranjito	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Naranjito	Wilson Popenoe	41	Pollock	7	48	\$96	\$192	\$288
1	Naranjito	Simmons	30	Pollock	18	48	\$96	\$192	\$288
1	Naranjito	Avila	42	Pollock	6	48	\$96	\$192	\$288
1	Naranjito	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Ponce	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Ponce	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Ponce	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Ponce	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
1	Utuado	Wilson Popenoe	43	Pollock	5	48	\$96	\$192	\$288
1	Utuado	Simmons	40	Pollock	8	48	\$96	\$192	\$288
1	Utuado	Avila	44	Pollock	4	48	\$96	\$192	\$288
1	Utuado	Butler	44	Pollock	4	48	\$96	\$192	\$288
1	Utuado	Semil 34	40	Pico Godreau	8	48	\$96	\$192	\$288
39			1,625		247	1,872	\$ 3,744	\$ 7,488	\$ 11,232

Figure 3

CONTACT INFORMATION

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STATE MANAGED PROJECT (3) (THROUGH 2nd AMENDMENT TO GRANT):

PROJECT TITLE: Incentivizing Sour Sops (Guanábanas) Production in PR to Satisfy Local Demand and Substitute Imports

PARTNER ORGANIZATION: FIDA

Responsible person: Agronomist Manuel Crespo, SAICA Auxiliary Secretary

PROJECT SUMMARY

This project proposed to evaluate crop alternatives of high investment and development, in a short time of period and in different agricultural areas; to incentivize local farmers and producers to sow new varieties of sour sops, and to establish the agricultural practices for the success of the investment, leading increase the sour sops acreage in Puerto Rico; to increase the presence of the crop of sour sops in our market and to obtain sour sops fruits of high quality. Seminars regarding best agricultural practices were planned to be given to the farmers, in order for them to achieve a high efficiency, performance and quality of their crops.

PROJECT APPROACH

The Department of Agriculture of Puerto Rico foster, promote and develop the agricultural, industrial, and commercial interests of Puerto Rico; plus seeks the management of the agricultural affairs of the country as a matter of food safety, so Puerto Rico could has the necessary production to satisfy as far as possible the ordinary local consumption of all our population necessary during the coming global shortage. They promote the **production**, distribution and widespread availability of agricultural products, such as sugar, vegetables, legumes, eggs, milk and derivatives, coffee, meats, **fruits**, fish and seafood, fats and oils, among others. The local demand of this sour sops (in Spanish, *guanábana*) fruit has been considerable increasing among the last few years. The sour sops are one of the so-called minor fruits which present great potential as a fresh fruit, and also for its market development in Puerto Rico. Due to the interest that has generated the production of this crop in Puerto Rico, the Department of Agriculture is promoting the establishment of crops in the island.

GOALS AND OUTCOMES ACHIEVED: Project not performed, no goals were met or outcomes achieved. No funds were used.

BENEFICIARIES: Project was not executed, there were no beneficiaries involved.

LESSONS LEARNED

Unfortunately, the project was not performed. Resignation of former Fruit Coordinator, plus changes in SAICA and FIDA direction, affected the start and the execution of this project.

CONTACT INFORMATION

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SUB GRANTEE'S PROJECTS

State Agency FIDA included, as part of proposed work plan, the approval and subsequent administration of sub grants developed by partner entities solely to enhance the competitiveness of specialty crops produced in PR. A work plan for collective aspects was implemented, and sub grantee projects were allotted funds that were expected to be used during the grant period. (The only sub grantee informed in this report is the one who completed its project recently. Other sub grantees projects that were completed and/or were not executed, due to many reasons, were previously informed in 2nd annual report.)

Sub grantee projects were the following:

SUB GRANTEE PROJECT 1: Coffee Cupping Laboratory

Partner Organization: International Coffee Vendors, Inc.

PROJECT SUMMARY

Involving the farmer in a seminar based presentation and visual comparisons of technical analysis involving agronomical, process and cupping topics, we were able to ensure that farmers understood the technical aspect as well as the fiscal analysis through cupping testing's.

The project consisted in the establishment of a Coffee Cupping Laboratory. This would increase the competitiveness of the coffee product, because each lot of coffee would be cupped before purchase, processed and/or marketed; using this as a check point for quality and part of Good Manufacturing Practices. In addition, each cupping result would be provided to the farmers at the point of origin, this promoting a culture of quality at farm level absolutely necessary in the specialty coffee industry. International Coffee Vendors, using their Cupper and Coffee Specialists, associated the coffee results to good/bad practices at farm level, in order to provide training to the farmers in Good Agricultural Practices.

PROJECT APPROACH/PURPOSE

The purpose of project was to improve the quality of coffee purchased on the Island. Thanks to the coffee laboratory we have been able to taste all the coffee samples we received before we purchase the coffee from farmers. The findings that we discover in the tastings are communicated to the farmer so that they can improve.

We have also used to Coffee Laboratory to educate farmers and the general public by inviting them to participate in the cupping sessions. Due to these procedures we have been able to pay a premium for the quality of coffee we are receiving. We pay above the prices established by DACO the local government standard price.

GOALS AND OUTCOMES ACHIEVED

We used the coffee Laboratory as Quality control of our coffee. We used it before we purchase green coffee and as we roast daily to make sure the quality remains the same. All the farmers we buy coffee from have participated in cupping coffee and have learned better practices due to the tasting.

Our Agronomist and Certified Cupper Jose O. Fabre Laboy was the person in charge of our laboratory, and he conducted seminars to the general public and farmers on a monthly basis. This seminar was Seed to Cup and he uses the cupping room to educate the public to distinguished quality coffee from regular coffee.

In the process of participating in the workshop farmers were able to understand the benefits of these practices and were able to increase the cup quality of their coffee. It's for this matter that in many cases some of the farmers participated only one time. This issue did not allow us to compare their progress in building better cup quality, from a statistic point of view. We interviewed participants analyzing their coffee at the stand point of market and analyzing in laboratory measures. This allowed many farmers to be more competitive and establish better agriculture practices.

BENEFICIARIES

The following is the list of farmers who have used the laboratory to cup the coffee:

<u>Farmer or Hacienda</u>	<u>Name of Farmer</u>
Agro Caribe Farms Corp	Jose Pons
Alberto Mendez Custodio	Alberto Mendez
Cafe del Alba	Ivette Pagan
Cafe Don Luis	Luis Roig and Nacho Pintado
Hacienda Ana Luisa	Ferdinand
Francisco Padua	
Hacienda San Pedro	Roberto Atenza
Hacienda Rolon	
Jose A Gonzalez Garcia	
Maria Feliciano Garcia	Abimael Ruiz
Jaguey Agro Corp.	Moncho Levy
Juan Pons	
Hacienda Los Tres Angeles	Juan Melendez
Hacienda Las Nubes.	Guillermo
LMM	Lester Marin

Even do, this is the official listing of participants that were directly associated with the workshop and cupping, there also secondary participants that benefits from this activities.

List of participants in learning seminars:

- A. June 28, 2014: Seminar on *Coffee Tasting & Classification 2014*
Participants/beneficiaries: 5
- B. May 17, 2014: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 9
- C. April 26, 2014: Seminar on *Coffee Tasting & Classification 2014*
Participants/beneficiaries: 7
- D. December 9, 2013: Seminar on *Espresso Training 2013*
Participants/beneficiaries: 1
- E. November 16, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 9
- F. October 26, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 8
- G. April 26, 2014: Seminar on *Coffee Tasting & Classification 2014*
Participants/beneficiaries: 7
- H. June 22, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 12
- I. April 20, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 9
- J. March 16, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 8
- K. May 18, 2013: Seminar on *Coffee Tasting & Classification 2013*
Participants/beneficiaries: 13

LESSONS LEARNED

Original project intended to acquire a specific equipment for the cupping laboratory. Nevertheless, ICV started to rebuild the laboratory and acquired the proposed equipment. For this main reason, and since the project was delayed, proponent submitted a prior approval request, proposing to acquire a different equipment necessary as well for the project. Same was approved accordingly.

CONTACT INFORMATION

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(787) 782-3737

ADDITIONAL INFORMATION



SUB GRANTEE PROJECT 2: Improving the Competitiveness of the Puerto Rican Coffee Sector through Farmer Training

Partner Organization: University of Puerto Rico, Utuado Campus

PROJECT SUMMARY

Organic coffee production is a promising agricultural enterprise for the Central Region of Puerto Rico. Coffee farmers could obtain price premiums for their organic coffee both at local, national and international markets. This project sought to enhance the competitiveness of the Puerto Rican organic coffee sector through farmer training in USDA-NOP standards and organic management practices in nurseries of coffee plants. A series of nine farmer workshops were offered at the University of Puerto Rico-Utuado (UPRU) from November 2014-May 2015, on different topics related to organic coffee production, USDA-NOP standards, and organic coffee nurseries. Workshops followed an experiential learning approach, combining theory, planning, hands-on experiences and group reflections. Workshop attendance ranged from 69 to 23 participants. Participants' knowledge of organic coffee nurseries increased after workshop participation. All workshop participants express their interest in participating in future activities organized by UPRU, and to stay connected through an Organic Coffee Knowledge Network. A new organic coffee nursery was established at UPRU. It will be used as an educational tool for farmers and agriculture students. Also, it will be a source of coffee plants for certified organic coffee farmers of Puerto Rico. This project enhanced the competitiveness of the organic coffee sector through changes in knowledge, actions and conditions.

PROJECT APPROACH

The goal of this project was to enhance the competitiveness of the Puerto Rican organic coffee sector through farmer training in USDA-NOP standards and organic management practices in nurseries of coffee plants. The objectives of the project were: 1) to facilitate workshops on organic management of coffee nurseries; 2) to start a model certified organic coffee nursery in UPRU for extension and education purposes; and 3) to continue to develop a knowledge network in organic coffee production. All project objectives were achieved. It was expected that by participating in project activities, participant coffee producers now have the basic skills and knowledge to start producing their own coffee plantings in compliance with USDA-NOP Standards.

GOALS AND OUTCOMES ACHIEVED

Project Activities

The first objective of the project was to facilitate workshops on organic management of coffee nurseries. A total of **nine workshops** were given at UPRU as part of the project. The sequence and titles of workshops were modified from the original proposal. However, all topics described in the original proposal were covered. The order of each workshop was: pre-test, lecture, morning snack, field exercise/practice, lunch, group discussion and post-test. Pre and post test data were analyzed using Info Stat Statistical Software.

As data did not meet normality assumptions, Mann-Whitney *U* test was used to compare pre and post test results. Table 1 below summarizes key results for each workshop.

Table 1: Summary of coffee nursery workshops facilitated as part of the project.

Workshop	Date	Number of participants	Key results
1. Introduction to organic coffee production and coffee propagation	11/07/2014	67	There was a significant ($p<0.0001$) increase in knowledge after the workshop. Most participants reported that they learned a lot about organic coffee (64% of responses), coffee seeds (80%) and coffee germinators (71%).
2. Organic Fertility management Part 1: Composts	11/21/2014	55	There was a significant ($p=0.0107$) increase in knowledge after the workshop. When asked to mention two things they had learned in the workshop, most participants mentioned the C/N Ratio and how to make vermicompost and pyramidal compost.
3. Organic Fertility management Part 2: Transplant and nutrient management in bags	12/12/2014	45	There was a significant ($p=0.0001$) increase in knowledge after the workshop. When asked to mention two things they had learned in the workshop, most participants mentioned how to prepare the growing media for bags, how to transplant seedlings to bags, and how to prepare compost tea with the plant <i>Urera baccifera</i> .
4. Organic disease management	02/06/2015	69	There was a significant ($p=0.0001$) increase in knowledge after the workshop. When asked to mention two things they had learned in the workshop, most participants mentioned the USDA NOP-rule for disease management, coffee diseases, how to prepare Bordeaux mix and biological control of coffee rust.
5. Organic pest management	02/20/2015	48	There was a significant ($p=0.0055$) increase in knowledge after the workshop. Most participants reported that they learned a lot about USDA NOP-rule for pest management (79%), pest management alternatives (83%), and coffee nursery pests (92%).

6. Propagation of accompanying plants for diverse organic coffee agroforestry systems	03/06/2015	34	There was not a significant increase in knowledge after the workshop ($p=0.2598$). When asked to mention two things they had learned in the workshop, participants mentioned the importance of incorporating other plants in coffee farms, the use of cover crops to protect the soil and specific plants and their uses (e.g. shade trees, green manure, etc.).
7. Construction of organic coffee nurseries	03/27/2015	38	There was a significant ($p<0.0001$) increase in knowledge after the workshop. Most participants reported that they learned a lot about temporary coffee nurseries (81%) and permanent coffee nurseries (77%).
8. Development of organic system management plans	04/10/2015	23	There was a significant ($p=0.0033$) increase in knowledge after the workshop. Most participants (80%) reported that they learned a lot about Organic System Plans and organic certification.
9. Transplant of coffee plants to the field	05/01/2015	45	The final evaluation survey was completed in this workshop. For this reason, no pre or post-test was given. Completion certificates were given to participants who attended the workshop series. As part of the final group discussion, participants concluded that it was important to continue the communication among organic coffee farmers. They suggested that having workshops like the ones in this project was important, and that workshops could be the meeting place of the OCK network.

As part of the last workshop, participants were asked to complete a final evaluation survey of all workshops. Twenty-seven participants completed the survey. They were asked to mention their favorite and least favorite aspect of the workshop series, and select which workshops they enjoyed the most and the least. Participants had diverse opinions about their favorite aspect. Their favorite aspects were: the diversity of topics and quality of the information (25% of responses), different techniques they learned (22%), focus on organic coffee production (14%), field exercises (14%), workshop facilitators (14%) and sharing experiences with other farmers (11%). Most participants answered that they did not have a least favorite aspect (70%) of the workshops. Other answers that were given were: transportation expenses, more facilitators, and the organic certification workshop. When asked to select their favorite workshop, most participants selected a combination of workshops (37%), Workshop 1 (22%) or all workshops (30%). The least favorite workshop was the organic certification workshop (26% of answers). However, most respondents left this question in blank.

All participants expressed that they would like to participate in more workshops in the future in UPRU. When asked to list these potential workshops, they mention workshops about: coffee

tasting, compost tea/biodynamic preparations, planting coffee with other crops, and organic management of coffee plantations. As part of the final group discussion, most participants mentioned that they would like more activities that bring farmers together to share their experiences and new knowledge and techniques. We concluded that future bi-annual workshops at UPRU will be the base and meeting point of the **new Organic Coffee Knowledge Network (OCK Network)** created as part of this project. The first activity of the OCK Network after project funding ended will be held on December 18, 2015. The activity will include a basic coffee tasting workshop and a game about the coffee agro ecosystem developed by researchers of the University of Michigan and ECOSUR, Mexico.

The final evaluation survey also asked participants if they were going to start an organic coffee nursery and when will they do this. Most participants (59%) said that were going to develop an organic coffee nursery. Six participants mentioned that they will do it this year, while the others answered “soon” or “do not know”. On September 2015, four months after the last workshop, these six participants were visited in their farms and interviewed. All participants said they were using some of the techniques they learned in the workshops. The most used techniques were: 1) the preparation and use of composts; 2) the preparation and use of compost tea with the plant *Urera baccifera*; 3) the preparation and use of their coffee plant growing media with horse manure and soil from their farm; 4) the use of mycorrhizae; and 5) the introduction of plants with pest repellent properties. Three participants had started their coffee nurseries and said they were managing it organically. They mentioned that their limitations were coffee pests and diseases, and that they would like more workshops on that subject.

As part of this project, a **new organic coffee nursery was constructed at the UPRU campus** farm. The nursery dimensions are 32 feet x 40 feet. On September 2015, the application for organic certification of the nursery and coffee plantation of UPRU were submitted to Quality Certification Services (QCS), as part of this project. The application was accepted and the inspection will be conducted on December 2015, according to QCS officials. It is expected that UPRU will produce its first certified organic coffee plants (and have them available for organic coffee growers) by May 2016. The propagation process will begin on December 2015.

GOALS AND OUTCOMES ACHIEVED

Expected Measurable Outcomes

Below are the expected outcomes of the project as described in the original proposal:

I. The project has had the following demonstrable impacts **to date**:

A. Changes in knowledge

Changes in knowledge were evaluated using pre and post test data from 8 workshops. Knowledge of workshop topics was significantly higher in post-tests from 7 workshops. In addition, participants self-reported they learned a lot. We conclude there was:

- 1) Increased knowledge of USDA-NOP Standards.
- 2) Increased knowledge of organic coffee farming.

3) Increased knowledge of organic coffee nurseries.

B. Changes in actions

Changes in actions were evaluated through a final evaluation survey and post workshop visit of six participants' farms. We conclude:

1) Coffee farmers consider organic production as a viable alternative.

3) Organic coffee farmers will produce their own coffee plantings.

C. Changes in conditions

Two of the completed project objectives resulted in the following changes in conditions:

1) A certified organic coffee nursery exists in Puerto Rico.

2) An organic coffee support network is available in Puerto Rico.

II. The project can have the following demonstrable impacts in the **future**:

B. Changes in actions

The following changes in actions were included in the original proposal but could not be observed or evaluated during the grant period. As the OCK Network continues to meet, these changes could be observable in the future:

2) Coffee farmers that already follow organic practices will consider certifying their operation.

4) Organic coffee farmers will consider the risks of introducing nonorganic coffee plantings in their farm.

C. Changes in conditions

The following change in condition was included in the original proposal but was not conclusively observable during the grant period:

3) A higher number of farmers produce organic coffee.

Several conventional coffee farmers and new farmers attended the workshops. They expressed interest in attending future workshops organized for the OCK network, and starting an organic coffee plot within their farms.

PROJECT BENEFICIARIES AND IMPACT

A total of 134 participants attended workshops. Participants were coffee farmers, agriculture students or other professionals with farmland interested in starting a coffee project. There was a significant change in knowledge about organic coffee nurseries after attending workshops. Farmers that were visited were applying techniques learned in workshops.

These techniques (e.g. use of compost and compost teas produced within farms) could reduce their need for external inputs, and lower their production costs. Three farmers started to produce their own coffee plantings reducing their need to purchase plants. We expect further farmer and community participation through future activities of the OCK Network and visits to the model organic coffee nursery at UPR-Utuado.

LESSONS LEARNED

Through this project, it was evident the interest farmers and the community have in learning new organic techniques that they can apply in their farms. The workshops were effective in increasing knowledge about organic coffee nurseries, and proved to be an important tool for farmer interaction. Visits to farms documented that farmers apply the techniques they learned in the workshops. However, attending nine workshops in two semesters was difficult for some participants. We infer this from the fluctuation in the number of participants and their reasons for not attending when we called them to ask. We recommend reducing the number of workshops to one per semester.

The University of Puerto Rico at Utuado proved to be an effective learning center in organic coffee production for Puerto Rico. Participants from several municipalities attended the workshops, and praised the facilities of UPRU. The new organic coffee nursery will be available for farmers and community members to visit. Many visitors are expected since UPRU is now the office of the Model Forest of Puerto Rico, and celebrates every year the Tierra Adentro Farm Fair, with over 10,000 attendees.

The Specialty Coffee Institute of the Caribbean of UPRU will coordinate future activities of the Organic Coffee Knowledge Network. Bi-annual (once per semester) workshops will be the first interaction tool tested for the functioning of the OCK Network. Through these workshops, the interaction between farmers will be evaluated. If needed, other platforms for their interaction will be tested. We originally envisioned a virtual interaction platform but reconsidered this after the project assessment, since many farmers do not feel comfortable working with computers or mobile devices.

CONTACT INFORMATION

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ADDITIONAL INFORMATION

- Photos of workshops and visited farms are available upon request.
- Some quotes from participants:
 1. *“Le agradezco a ustedes por ocuparse de tan importante labor; la de educar. Mi empleado David González se aprovechó de sus clases y desde entonces ha estado con más ánimo de aplicar las prácticas agroecológicas que realizamos en la finca. Muchas gracias por su muy*

necesaria labor, los felicito.” Quote from Ing. Carlos E. Pacheco- Hacienda Vista Hermosa, Jayuya P.R.

2. *“Gracias a todos ustedes por el esfuerzo y facilitarnos con tanta información a nosotros los agricultores. Mucho éxito y continúen promoviendo los movimientos agroecológicos y orgánicos, es y será nuestra única alternativa como pueblo.”* Elena Biamón, Finca Gripiñas, Jayuya, P.R.

Attached a picture which demonstrates to prepare Bordeaux Mix in Workshop #4.



SUB GRANTEE PROJECT 3: Agro-morphological characterization of 25 dragon fruit varieties and their adaptation to the climate of the island of Puerto Rico

Partner Organization: De Rústica Farm

PROJECT SUMMARY

This project characterized a collection of 25 varieties of Dragon fruit at a farm on the southeast region of Puerto Rico, on the municipality of Naguabo. Several agronomic qualities were observed and their adaptation to the unique climate and soil conditions of the region. The results of the study would freely been published in PDF format on the official website of the Department of Agriculture of Puerto Rico. As established, the plantation would be a source of vegetative cuttings at a minimal cost for anyone desiring a dragon fruit plantation. In this manner, the project accomplished its objectives of filling an information void and impacting the highest number of farmer interested in the cultivation of this fruit.

PROJECT APPROACH

Dragon fruit is an epifitic cactus with a large succulent fruit of growing economic importance. Twenty-five dragon fruit varieties were planted in wooden trellis system on the southeastern side of the island. The plants were established into randomized replicated trials, at a spacing of 8' by 8'. Despite suffering 2 droughts the plants survived and were able to reach the uppermost part of the trellis. The growth rate was measured on a monthly basis. The flowering was observed, and the fruits of those varieties that produced was measured and weighted.

Self pollinated varieties were artificially aided by manually shaking the flowers at night, varieties that required cross pollination were left to be pollinated naturally by bats. Based on the criteria of growth rate, second year flowering, productivity and drought resistance we identified 5 varieties which we understand are the most promising for commercial production in Puerto Rico.

Despite being genus native to Puerto Rico the fruit of the *Hylocereus* family remains relatively unknown. What little fruit can be found commercially it is sold at very high prices. We understand this is a good economic opportunity for local farmers. The original purpose of the grant proposal for this study was to observe how a number of commercially available dragon fruit varieties adapted to local conditions. The first problem any farmer would face when wanting to grow dragon fruit in Puerto Rico would be an information vacuum, with regards to its growth and acquisition of cuttings.

At the time of the writing of the proposal there was only one available document, a three page guide with only general and basic instruction about how to grow dragon fruit in Puerto Rico. Half way through the study, we consulted local farmers and agronomy students and concluded that a standalone scientific study would not fulfill the information needs of farmers. For this reason we decided to create a guide which would include the results of the study plus our experiences growing dragon fruit. An additional problem faced by farmers is a lack of a local germplasm where they can acquire dragon fruit cuttings at an affordable price. Once fully established the experimental plot constructed for the study will be a local source of plantings for farmers

GOALS AND OUTCOMES ACHIEVED

Activities performed:

The activities performed can be best summarized into 3 main phases:

As an addition to our promotion we focused on web advertisement. Our ad through our website had a range of 108,983 people directly and was shared 196 times. Finca De Rustica direct orders by publication through our website and email had a total of 421 approx. The PDF file was shared with other forums fruit on Facebook, however we did not measure its outcome. Most of the people who asked for the publication were not farmers, but people who have pitahayas in their homes and wanted to know how to grow them.

Additionally the ad had 484 likes and 141 shares which further increased its reach. The direct result in terms of individuals asking for the PDF file was that on the first few hours we had 98 people asking for a copy of the file (**potential impact results**). On a daily basis we have no less than 15 people asking for the PDF file.

Phase 1: Consisted of acquiring the materials and cuttings necessary to begin the project. During this phase we prepared the plot and a total of 450 wooden trellises were built and installed. Each had a total of 3 dragon fruit cuttings planted at the base. We observed that the epiphytic roots had problems adhering to the treated wood, to solve this we covered the trellises with recycled non treated wood, which solved the problem.

Phase 2: Consisted of observing the dragon fruit growth. During this period the island suffered one of its worst recorded droughts in recent history. During the first 3 months the dragon fruits presented little to no adverse effects from the lack of water. We installed a drip irrigation system. Unfortunately due to the severity of the drought the local state department of environmental protection issued a restriction over the use of water which prohibited its use during certain hours of the day. In addition to that, pressure was diverted from our low population density sector, to the point that it was too low even for a drip irrigation system. We observed that the varieties responded similarly to the drought. Despite not having data which to compare our results it is reasonable to believe that these harsh conditions led to the varieties growing at a reduced rate and producing a reduced number of flowers and fruit.

Phase 3: Consisted of giving publicity to the study and distributing the study to interested farmers. During this time members of *Finca De Rustica Corp* were interviewed by a local newspaper for an unrelated issue. Mentions of the dragon fruit study were made which led to being invited to two radio shows in which we gave the study further publicity. We also gave a presentation in one of the local universities about cut flower production in which we made a mention of the study. During this time *Finca De Rustica Corp* built a page on Facebook which has garnered over 15,000 followers. Using this medium people interested in the study have been invited to visit. We also used Facebook to publish the dragon fruit guide in PDF format. The publication as of the moment of writing has garnered 75,980 people reached (**measurable outcome**). This is a direct measurement of how many people have seen the ad announcing the publication of the study.

Additionally the ad has 484 likes and 141 shares which further increased its reach. The direct result in terms of individuals asking for the PDF file was that on the first few hours we had 98 people asking for a copy of the file (**potential impact results**). On a daily basis we have no less

than 15 people asking for the PDF file. The file has also been shared with multiple administrators of farming based Facebook pages so they can freely publish them to their audiences. A great advantage of this method of distribution is that we can observe directly who is asking for the file and that person can ask us directly any doubts they may have. If the doubt proves to be repetitive among many people, we can then amend the file fixing the problem. For the moment all comments regarding the contents of the file have been positive. Dragon Fruit plants need to be of a certain size before it can be heavily pruned to sell the cuttings to other farmers. To sell cuttings to farmers is one of the stated goals of this project. Due to the drought, our plants did not grow to the required size.

To address this issue we partnered with Soto Lisboa (**Partners**), a local farmer that grows 15 of the 25 varieties used for the study. *Soto Lisboa* sells dragon fruits cuttings. In the publication we mention his farm as a local source of cuttings currently available. We were informed by *Soto Lisboa* that since the publication he has seen an increase in calls from interested people. *Soto Lisboa* also provided us with pictures of his dragon fruit trellis. His system is a different one to the one used by *Finca De Rustica*, mentioning alternative systems is a valuable addition to the study.

The goals of the original proposal were met but some on a limited basis. For example, it was planned to measure the productivity and weight of the fruits produced, but due to the harsh drought conditions not all varieties yielded fruit. While in of itself a result it does not fully fulfill the stated goal. We intent to address this issue by consistently updating the publication as new results come along.

The goals of establishing the dragon fruit plot and observing its adaptation have been fulfilled. Our current goals are on a long term basis, which are continuing to distribute the file, amend the results as new results come along and to provide cuttings for potential farmers.

BENEFICIARIES

As mentioned before, during this time *Finca De Rustica* Corp built a page on Facebook which has garnered over 15,000 followers. Using this medium people interested in the study has been invited to visit. We also used Facebook to publish the dragon fruit guide in PDF format. The publication as of the moment of writing has garnered 75,980 people reached (**measurable outcome**). This is a direct measurement of how many people have seen the ad announcing the publication of the study.

Farmer	Description
Amaury Ortiz	He is the author and president of Finca De Rustica.
Sofia Caceres	Vice President and Editor
Janira Nazario	Secretary of Finca de Rustica
Prudencio Martinez	Farmers
Juan Castrillo	Farmers
Danilo Quicho	Farmers

Agro. Luis Viera	Agronomists
Agro. Jose Zamora	Agronomists

LESSONS LEARNED

The primary problem faced during this project was the lack of water due to the drought. This drought was the worst in recent history, due to its harshness the solution to this problem would have to vary to meet the requirements of each particular farmer. For our case we are in the process of reinstalling an old well and digging recollection ponds. Despite the drought the dragon fruit survived and managed to grow. If conditions like these repeat in the future, farmers can be assured that they will not lose the considerable investment made on the dragon fruit orchard. All goals were met and by making a guide we added additional goals to this project which were also met.

CONTACT INFORMATION

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ADDITIONAL INFORMATION

Image 1: Publicity in Facebook.

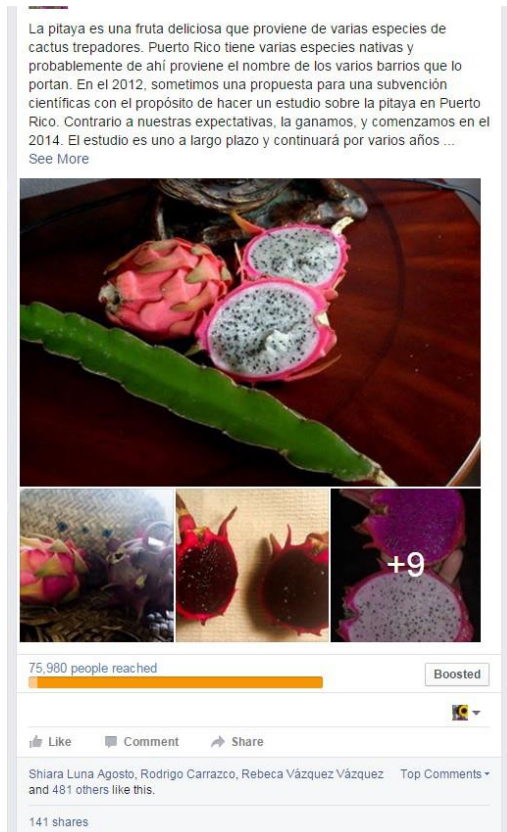


Image 2: Crop



SUB GRANTEE PROJECT 4: Create Small Plant to Process Bee Wax

Partner Organization: Escuela de Apicultura

This proponent never responded to our requests to submit the documents and sign the contract. The project was never performed.

We will submitting amendment as soon as possible.